Guess My Rule – Teacher Notes

8.F.1 Understand that a function is a rule that assigns to each input exactly one output.

Objective:

The teaching objective of the game, “Guess my Rule” is to help students, in a fun, game format, solidify the concept that a function is a rule that assigns to each input exactly one output.

Playing the Game

|  |  |
| --- | --- |
| Input  x-value | Output  y-value |
| 20 | 41 |
| 6 | 13 |
| 13 | 27 |
| 8 | ? |
|  |  |

As the teacher, you think of a simple function rule such as, ,

and draw an input-output table on the white board. You explain to the

the class that you have a function rule in mind that will give the output-value

for a given input. The students are to try and guess your rule.

To begin the game you ask a class member to volunteer an input-value;

you apply your function rule and provide the corresponding out-put value.

For example, if a student chooses, , you write the ordered pair,

on the table. You continue to ask for input-values and provide

the corresponding output values until someone thinks they know the function rule.

Tell that student not to shout out his or her guess. Instead, to check the guess, give them an input- value and have them give the corresponding output. Continue the game in this manner until a good number of students have guessed the function rule. To end the game, have a student give the function rule and explain how they guessed it. (You can have several students explain their thinking.)

Play several rounds of the game as described above. Now vary the game slightly by letting a student choose a function rule and ask for volunteers to give him, or her, input-values.

Independent Practice

Students can work in study teams to complete the worksheet: “Functions: Guess my Rule”.

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class Period \_\_\_\_

Functions: Guess My Rule

**A function is a rule that assigns to each input exactly one output. Determine the function rule for each input-output table. Use the rule to complete the table. Make up your own ordered pair for the last two rows on each table.**

|  |  |
| --- | --- |
| Input x | Output y |
| hat | head |
| glove |  |
| shoe |  |
|  | wrist |
| ring | finger |
|  |  |
|  |  |

Rule:

|  |  |
| --- | --- |
| Input x | Output y |
| cold |  |
| up | down |
| left |  |
|  | light |
| fast |  |
|  |  |
|  |  |

Rule:

|  |  |
| --- | --- |
| Input x | Output y |
| D | F |
| A |  |
|  | K |
| L | N |
| Q |  |
|  |  |
|  |  |

Rule:

1. 2. 3.

|  |  |
| --- | --- |
| Input x | Output y |
| 100 | 504 |
| 7 |  |
|  | 24 |
| 1 | 9 |
|  |  |
|  |  |
|  |  |

Rule:

|  |  |
| --- | --- |
| Input x | Output y |
| 8 |  |
| 7 |  |
| 0 |  |
|  |  |
| 10 |  |
|  |  |
|  |  |

Rule:

|  |  |
| --- | --- |
| Input x | Output y |
| 10 | 19 |
| 100 | 199 |
| 5 |  |
|  |  |
|  | 15 |
|  |  |
|  |  |

Rule:

7. 8. 9.

|  |  |
| --- | --- |
| Input x | Output y |
| 100 | 53 |
| 8 |  |
|  | 5 |
| 20 | 13 |
| 18 |  |
|  |  |
|  |  |

Rule:

|  |  |
| --- | --- |
| Input x | Output y |
| 3 | 9 |
| 4 | 16 |
| 7 |  |
|  | 25 |
|  |  |
|  |  |
|  |  |

Rule:

|  |  |
| --- | --- |
| Input x | Output y |
| 12 | 25 |
|  |  |
|  | 11 |
| 10 | 21 |
| 3 |  |
|  |  |
|  |  |

Rule:

4. 5. 6.

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class Period \_\_\_\_

KEY - Functions: Guess My Rule

**A function is a rule that assigns to each input exactly one output. Determine the function rule for each input-output table. Use the rule to complete the table. Make up your own ordered pair for the last two rows on each table.**

|  |  |
| --- | --- |
| Input x | Output y |
| hat | head |
| glove | hand |
| shoe | foot |
| bracelet | wrist |
| ring | finger |
| sock | foot |
| earring | ear |

Rule: where does it go

on body?

|  |  |
| --- | --- |
| Input x | Output y |
| cold | hot |
| up | down |
| left | right |
| dark | light |
| fast | slow |
| in | out |
| before | after |

Rule: opposites

|  |  |
| --- | --- |
| Input x | Output y |
| D | F |
| A | C |
| I | K |
| L | N |
| Q | S |
| T | V |
| E | G |

Rule: 2 letters after

1. 2. 3.

|  |  |
| --- | --- |
| Input x | Output y |
| 100 | 504 |
| 7 | 39 |
| 4 | 24 |
| 1 | 9 |
|  |  |
| 2 | 14 |
| 6 | 34 |

Rule:

|  |  |
| --- | --- |
| Input x | Output y |
| 8 |  |
| 7 |  |
| 0 |  |
| 3 |  |
| 10 |  |
| 5 |  |
|  | 11 |

Rule:

|  |  |
| --- | --- |
| Input x | Output y |
| 10 | 19 |
| 100 | 199 |
| 5 | 9 |
|  |  |
| 8 | 15 |
| 0 |  |
| 11 | 21 |

Rule:

7. 8. 9.

|  |  |
| --- | --- |
| Input x | Output y |
| 100 | 53 |
| 8 | 7 |
| 4 | 5 |
| 20 | 13 |
| 18 | 12 |
| 10 | 8 |
| 12 | 9 |

Rule:

|  |  |
| --- | --- |
| Input x | Output y |
| 3 | 9 |
| 4 | 16 |
| 7 | 49 |
| 5 | 25 |
|  | 36 |
| 1 | 1 |
| 9 | 81 |

Rule:

|  |  |
| --- | --- |
| Input x | Output y |
| 12 | 25 |
|  |  |
| 5 | 11 |
| 10 | 21 |
| 3 | 7 |
| 8 | 17 |
| 0 | 1 |

Rule:

4. 5. 6.

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